

Education Data Analysis for SDGs Achievement: An Eagle Eye View

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Transforming Our World is the message conveyed by the United Nation in its 2030 agenda. Compared to Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs) emerged to address global challenges, taking into account national priorities and cultural differences.

Acknowledging global values is imperative to be reflected in our actions, as the Russian philosopher Alexander Chumakov argues that the main purpose for humanity is to achieve unity, while recognizing our cultural differences. Therefore, it is a priority to lay down a set of agreed upon foundations and principles for a global society, and to formulate a global consciousness and a humanistic worldview that effectively reveals the realities of our problems, this is where the role of education comes in handy toward achieving SDGs targets.

SDGs implementation requires an integrative process to ensure achieving desired targets, as the interconnectivity between goals is evident. Education serves as a mean of implementation (MOI) that is crosscutting through all of SDGs. Although, advanced technology has revolutionized business and work environment, education and capacity building aspects are still lagging. Education systems in less developed countries still concerned with classic subjects that lack tapping uncharted potentials, and focus on urgent global challenges. Setting the foundations at the basic education students through raising awareness and encouraging them to explore and investigate these problems, and teaching them how to use critical thinking methods to suggest creative solutions to such problems will have a direct impact on their personal behavior toward these challenges in their day to day routine, leading to a greater impact on the magnitude of the problems and the time required to overcome.

School effectiveness studies concluded that teachers make a difference. Yet, the lack of sophisticated tools to map the quality of teaching and learning remains a challenge. Elliot Eisner stipulates in his book “The Enlightened Eye” that the ability to discern patterns of behavior in the classroom is what distinguishes the expert who acquired deep understanding of classroom dynamics throughout years of practice. There are relatively few theoretically grounded and validated tools designed to “map” the ongoing teaching-learning process in classrooms. Along this research paper, the construction and validation of a fuzzy hierarchical system for teaching effectiveness enhancement will be described. It is an adapted “tool” that aims to “measure” teaching and learning practices within classroom activities. This system is a combination of four computational intelligence procedures, i.e., hierarchical building scheme, the gray relational analysis, fuzzy construction rules, and fuzzy inferences.

The proposed paper will investigate and analyze current basic education systems in the MENA region, and its alignment toward achieving sustainable development goals. The hierarchical fuzzy system’s estimations regarding teaching effectiveness characteristics will be used to

extract the most relevant observable and measurable practices that reveal teaching weaknesses and strengths, and affect students' engagement and motivation to learn, to assist in recommending a set of policies and action plan to capitalize on the strength points and enhance the weak aspects.